REMARKS

Claims 1-26 and 28 are pending in this application after amendments. Claims 1 and 22 have been amended to distinctively claim the invented subject matter. Claims 5, 6, 10, 13, 15, 17 and 21 have been amended to eliminate the multiplicity. Claims 18 and 28 have been amended to address minor issues. The amendments are supported by the originally filed description and drawings (e.g., [0069] and FIG 4). Claim 27 has been cancelled without prejudice. No new matter has been added.

Information Disclosure Statement

An IDS is enclosed herein including the cited prior arts in the Description.

Claims 5-21 and 27-28 are objected to under 37 CFR 1.75(c) as being in improper form

The requisite amendments have been made to the corresponding claims; applicants believe that the amendments made shall be enough to overcome this objection.

Claims 22-26 stand rejected under 35 U.S.C. 101 for being directed to non-statutory subject matter

Applicant appreciates the examiner's kind suggestions for making appropriate amendments to overcome this section 101 rejection; corresponding amendment has been made to claim 22.

Claims 1-4 and 22-26 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ganz et al (US 6,558,623)

Claims 1-4 and 22-26 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ganz et al (US 6,558,623). The examiner basically alleges that Ganz et al. teach all claimed subject matters in claims 1-4 and 22-26.

Applicants respectfully traverse the rejections for the following reasons.

1) The status of claims after amendments

Since claims 5-21 and 27 are properly dependent from claims 1 or 2 respectively either directly or indirectly, the following discussion will include all pending claims 1-26 and 28.

2) Claimed subject matters in claims 1-26 and 28

The present invention is directed to automatic vision inspection an classification of microarray slides by first determining the slide orientation using the spots located within one or more blocks on the slide in view of a reference image, then locating the individual spots on the slide accurately, and then determining the quality of spots on the slide.

Claim 1 as a representative of the claimed subject matters in claims 1-26 and 28 is directed to a method for automatic inspection of a microarray slide, where the method comprises obtaining a gray scale image of the microarray slide, wherein the microarray slide comprises one or more blocks containing arrays of spots, binarizing the gray scale image by selecting a threshold, morphologically dilating the binarized image so as to generate a merged component, calculating rotational offset and translational offset of the merged component so as to align the gray scale image with a reference image, locating the individual spots within the arrays of spots of the microarray slide, and determining qualities of the located spots on the microarray slide by using threshold methods.

As highlighted by the underlined above, among the claimed features in the automatic inspection and classification are the unique manipulations on the gray image of the microarray slide. For example, the binarized image is morphologically dilated so as to form a merged block, where the merged block is used to calculate its rotational and translational offsets so that the individual spots on the slide can be located and classified accurately. As discussed below, Ganz et al. fail to teach or suggest the claimed subject matters in claims 1-26 and 28 when viewed inventions in their entirety.

3) Ganz et al. fail to anticipate Claims 1-26 and 28

Ganz et al. disclose a microarrayer comprising at least one camera for acquiring and transmitting slide image data to a computer, where the computer analyzes the slide

image data to provide for example the information relating to slide alignment enabling the adjustments of the spotting heads of the microarrayer and the slides, and the information relating to spot quality enabling the rework on the spots. See, e.g., Abstract.

Ganz et al. disclose the computer controlled pass-fail determination technique that determines individual spots as pass or fail based on several criteria such as spot presence, spot size, spot location and spot geometry. However, Ganz et al. fail to disclose any details of how the slide orientation can be determined or how the individual spots can be located on a slide automatically. Without the accurate location of the individual spots on a slide is it impossible to perform any meaningful analysis of the spots on the slide. It is evident that Ganz et al. fail to teach or suggest the claimed subject matters in claims 1-26 and 28. Therefore, applicants respectfully submit that Ganz et al. fail to anticipate the present invention, and the rejection to claims 1-26 and 28 over Ganz et al. be withdrawn.

Conclusion

Claims 1-26 and 28 are now in condition for allowance. Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

Lawrence Y D Ho & Associates

By _____

George D. Liu

Reg. No. 47,752

Tel.: (703) 536-1713